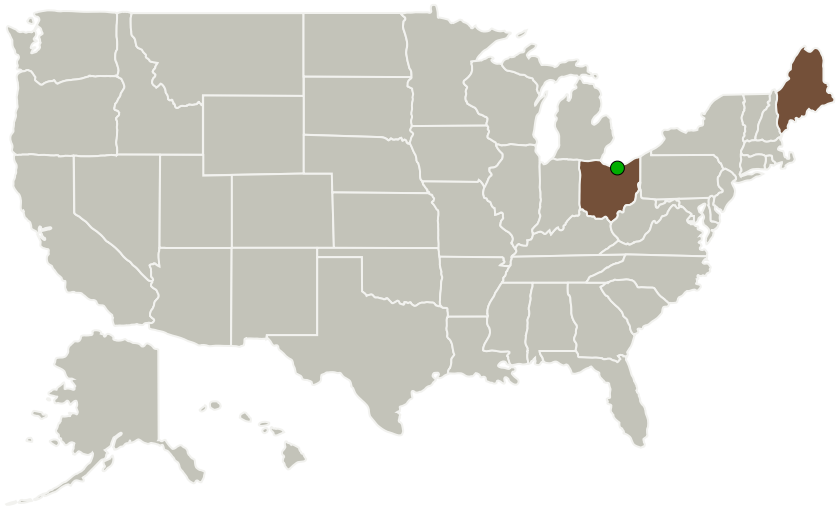
Alloying and Casting Furnace for Shape Memory Alloys, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

The concept in the proposed project is to create a melting, alloying and casting furnace for the processing titanium based SMA using cold crucible techniques. The cold crucible furnace configuration will allow the material to remain pure without ceramic contamination. By using a combination of arc melting and induction processes it will also allow the material to be fully alloyed from elemental feed stock. The complete alloying and casting process will be contained in one vacuum/atmospheric chamber reducing the introduction of oxygen in the process. The deliverable at the end of the project will be to deliver a fully developed melting, alloying and casting furnace for processing 500g melts to The Advanced Metallics Branch of NASA Glenn Research Center.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Arcast Inc.	Lead Organization	Industry	Oxford, Maine
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

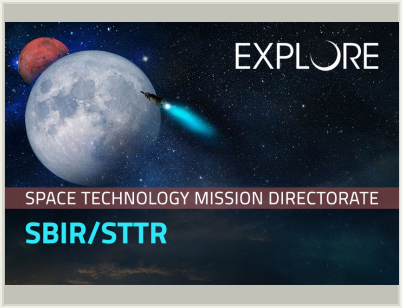


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Table of Contents

Alloying and Casting Furnace for Shape Memory Alloys, Phase I

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Primary U.S. Work Locations	
Maine	Ohio

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137991)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Arcast Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

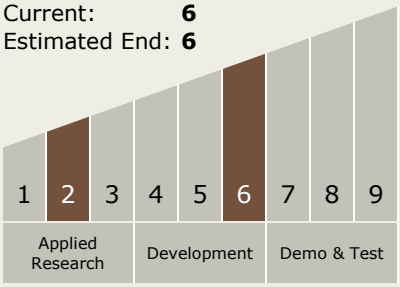
Carlos Torrez

Principal Investigator:

Sasha D Long

Technology Maturity (TRL)

Start: **2**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.1 Materials
    - TX12.1.8 Smart Materials

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System